

1 This listing of claims will replace all prior versions, and listings, of claims
2 in the application:

3
4 **Listing of Claims**

5 Claim 1 (**Previously Presented**): One or more computer-readable media
6 comprising a flash memory driver that is executable by a computer to interface
7 between a file system and one or more flash memory media, the flash memory
8 driver comprising:

9 flash abstraction logic that is invocable by the file system to manage
10 flash memory operations without regard to the type of the one or more flash
11 memory media; and

12 flash media logic configured to interact with different types of the
13 flash memory media;

14 wherein the flash abstraction logic invokes the flash media logic to
15 perform memory operations that are potentially performed in different ways
16 depending on the type of the flash memory media, and further wherein the flash
17 memory driver is flash memory medium agnostic.

18
19
20 Claim 2 (**Original**): The flash memory driver as recited in Claim 1,
21 wherein one of the flash memory operations includes performing wear-leveling
22 operations associated with the flash memory medium.

1 Claim 3 (**Original**): The flash memory driver as recited in Claim 1,
2 wherein one of the flash memory operations includes maintaining data integrity of
3 the flash memory medium.

4
5 Claim 4 (**Original**): The flash memory driver as recited in Claim 1,
6 wherein one of the flash memory operations includes handling recovery of data
7 associated with the flash memory medium after a power-failure.

8
9 Claim 5 (**Original**): The flash memory driver as recited in Claim 1,
10 wherein one of the flash memory operations includes mapping status information
11 associated with physical sectors of the flash memory medium for use by the file
12 system.

13
14 Claim 6 (**Previously Presented**): The flash memory driver as recited in
15 Claim 1, wherein the flash medium logic is further configured to translate
16 commands received from the file system to physical sector commands for issuance
17 to the flash memory media.

18
19 Claim 7 (**Previously Presented**): The flash memory driver as recited in
20 Claim 1, wherein the flash medium logic is user programmable to read, write and
21 erase data to and from the flash memory media.

22
23 Claim 8 (**Previously Presented**): The flash memory driver as recited in
24 Claim 1, wherein the flash media logic is configured to perform error code
25 correction associated with the flash memory media.

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2 Claim 9 (**Previously Presented**): A flash driver, comprising:
3 flash abstraction logic, interposed between a file system and a flash
4 memory medium, configured to:
5 (a) map a logical sector status from the file system to a physical
6 sector status of the flash memory medium; and
7 (b) maintain memory requirements associated with operating the
8 flash memory medium;
9 wherein the flash driver is located remote from the flash memory
10 medium.
11

12 Claim 10 (**Original**): The flash driver as recited in Claim 9, further
13 comprising a user programmable flash medium logic, configured to read, write and
14 erase data to and from the flash memory medium.
15

16 Claim 11 (**Original**): The flash driver as recited in Claim 9, further
17 comprising a user programmable flash medium logic configured to receive and
18 translate specific operational commands from the file system associated with
19 reading and writing data to the flash memory medium.
20

21 Claim 12 (**Original**): The flash driver as recited in Claim 9, wherein the
22 memory requirements include managing wear-leveling operations associated with
23 the flash memory medium.
24
25

1 Claim 13 (**Original**): The flash driver as recited in Claim 9, wherein the
2 memory requirements include maintaining data integrity of the flash memory
3 medium.

4
5 Claim 14 (**Original**): The flash driver as recited in Claim 9, wherein the
6 memory requirements include handling recovery of data associated with flash
7 memory medium after a power-failure.

8
9 Claim 15 (**Original**): The flash driver as recited in Claim 9, further
10 comprising a flash medium logic, programmably configurable by a user to perform
11 error code correction associated with the flash memory medium.

12
13 Claim 16 (**Previously Presented**): A flash driver, comprising:
14 user programmable flash medium logic, configured to read, write
15 and erase data to and from a flash memory medium; and
16 flash abstraction logic, interposed between a file system and flash
17 memory medium to maintain universal requirements for the operation of the flash
18 memory medium;
19 wherein the flash memory driver is flash memory medium agnostic.

20
21 Claim 17 (**Original**): The flash driver as recited in Claim 16, wherein the
22 flash abstraction logic passes specific commands associated with certain types of
23 flash memory media directly to the flash medium logic for translation and
24 execution.

1 Claim 18 (**Original**): The flash driver as recited in Claim 16, wherein the
2 flash abstraction logic is an interface between the flash medium logic and the file
3 system.
4

5 Claim 19 (**Original**): The flash driver as recited in Claim 16, wherein the
6 universal requirements include maintaining data integrity of the flash memory
7 medium.
8

9 Claim 20 (**Original**): The flash driver as recited in Claim 16, wherein the
10 universal requirements include managing wear-leveling operations associated with
11 the flash memory medium.
12

13 Claim 21 (**Original**): The flash driver as recited in Claim 16, wherein the
14 universal requirements include handling recovery after a power-failure.
15

16 Claim 22 (**Original**): The flash driver as recited in Claim 16, wherein the
17 flash medium logic comprises a set of programmable entry points that can be
18 implemented by a user to interface with the type of flash memory medium selected.
19

20 Claim 23 (**Previously Presented**): A processing device that uses a flash
21 memory medium for storage of data, comprising:

22 a file system, configured to control data storage for the processing
23 device;

24 flash media logic, configured to perform physical sector operations
25 to a flash memory medium based on physical sector commands, wherein the flash

1 medium logic comprises a set of programmable entry points that can be
2 implemented by a user to interface with any type of flash memory medium
3 selected; and

4 flash abstraction logic, configured to maintain flash memory
5 requirements that are necessary to operate the flash memory medium.
6

7 Claim 24 (**Original**): The processing device as recited in Claim 23,
8 wherein the flash abstraction logic passes physical logic commands associated
9 with certain types of flash memory medium directly to the flash memory medium
10 logic for translation and execution.
11

12 Claim 25 (**Original**): The processing device as recited in Claim 23,
13 wherein the flash abstraction logic is an interface between the flash medium logic
14 and the file system.
15

16 Claim 26 (**Original**): The processing device as recited in Claim 23,
17 wherein the flash memory requirements include maintaining data integrity of the
18 flash memory medium.
19

20 Claim 27 (**Original**): The processing device as recited in Claim 23,
21 wherein the flash memory requirements include managing wear-leveling
22 operations associated with the flash memory medium.
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24
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1 Claim 28 (**Original**): The processing device as recited in Claim 23,
2 wherein the flash memory requirements include handling recovery after a power-
3 failure.

4
5 Claim 29 (**Original**): The processing device as recited in Claim 23,
6 wherein the requirements are common to a plurality of different flash memory
7 media.

8
9 Claim 30 (**Original**): The processing device as recited in Claim 23,
10 wherein the flash medium logic comprises a set of programmable entry points that
11 can be implemented by a user to perform error code correction with the type of
12 flash memory medium used in the processing device.

13
14 Claim 31 (**Original**): The processing device as recited in Claim 23,
15 whereby the flash medium logic relieves the flash abstraction logic from
16 performing translation of the physical sector commands received from the file
17 system.

18
19 Claim 32 (**Original**): The processing device as recited in Claim 23,
20 wherein the physical sector operations include read, write and error code
21 correction commands associated with the flash memory medium.

22
23 Claim 33 (**Previously Presented**): In a processing device that uses a flash
24 memory medium for storage of data, a method for driving the flash memory
25 medium, comprising:

1 managing rules associated with operating the flash memory medium
2 in a flash abstraction logic; and
3 issuing physical sector commands directly to the flash memory
4 medium from a flash medium logic;
5 wherein the method is flash memory medium agnostic.
6

7 Claim 34 (**Original**): The method as recited in Claim 33, wherein one of
8 the rules includes maintaining data integrity of the flash memory medium.
9

10 Claim 35 (**Original**): The method as recited in Claim 33, wherein one of
11 the rules includes managing wear-leveling operations associated with the flash
12 memory medium.
13

14 Claim 36 (**Original**): The method as recited in Claim 33, wherein one of
15 the rules includes handling recovery of the media after a power-failure.
16

17 Claim 37 (**Original**): The method as recited in Claim 33, wherein issuing
18 physical sector commands directly to the flash memory medium comprises
19 receiving read and write commands from a file system and translating them into
20 the physical sector commands.
21

22 Claim 38 (**Original**): The method as recited in Claim 33, further
23 comprising issuing a set of programmable entry points that can be implemented by
24 a user to perform error code correction with the type of flash memory medium
25 used in the processing device.

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2 Claim 39 (**Original**): The method as recited in Claim 33, further
3 comprising issuing a set of programmable entry points that can be optionally
4 selected by a user to interface with the type of flash memory medium used in the
5 processing device.

6
7 Claim 40 (**Original**): The method as recited in Claim 33, further
8 comprising receiving read and write commands from a file system.

9
10 Claim 41 (**Original**): One or more computer-readable media comprising
11 computer-executable instructions that, when executed, perform the method as
12 recited in claim 33.

13
14 Claim 42 (**Previously Presented**): A computer-readable medium for a
15 flash driver, comprising computer-executable instructions that, when executed,
16 direct the flash driver to provide an interface between a file system, selected from
17 one of a plurality of different file systems, and a flash memory medium, selected
18 from one of a plurality of different flash memory media, wherein the flash driver is
19 located remote from the flash memory medium.

20
21 Claim 43 (**Previously Presented**): A computer-readable medium for a
22 flash driver, comprising computer-executable instructions that, when executed,
23 direct the flash driver to:
24
25

1 provide an interface between a file system, selected from one of a
2 plurality of different files systems, and a flash memory medium, selected from one
3 of a plurality of different flash memory media; and

4 manage a set of characteristics that are common to the plurality of
5 different flash memory media at a flash abstraction logic;

6 wherein the flash driver is flash memory medium agnostic.

7
8 **Claim 44 (Previously Presented):** A computer-readable medium for a
9 flash driver, comprising computer-executable instructions that, when executed,
10 direct the flash driver to:

11 provide an interface between a file system, selected from one of a
12 plurality of different files systems, and a flash memory medium, selected from one
13 of a plurality of different flash memory media;

14 manage a set of characteristics that are common to the plurality of
15 different flash memory media at a flash abstraction logic; and

16 provide programmable entry points that can be optionally selected by
17 a user to interface with the type of flash memory medium selected;

18 wherein the flash driver is located remote from the flash memory
19 medium and the flash driver is flash memory medium agnostic.